

Amendments to the Claims

This listing will replace all prior versions and listings of claims in the application.

Listing of Claims:

1-18. Canceled

19. (new) A method for generating a data packet in a mobile communication system, the method comprising:

at a second layer, receiving at least one first layer data packet from a first layer and storing said at least one first layer data packet in a second layer memory by shifting said at least one first layer data packet by as many bits as indicated by a second layer header;

adding the second layer header in front of said at least one first layer data packet to make a second layer data packet; and

transferring at least one second layer data packet to a third layer,

wherein said second layer header includes control information for said second layer data packet.

20. (new) The method of claim 19, further comprising:

at said third layer, receiving said at least one second layer data packet and storing said at least one second layer data packet in a third layer memory; and

adding cyclic redundancy checking (CRC) at the rear of said at least one second layer data packet to make a third layer data packet.

21. (new) The method of claim 19, wherein the first layer comprises a radio link control (RLC) layer.

22. (new) The method of claim 19, wherein the second layer comprises a medium access control (MAC) layer.

23. (new) The method of claim 19, wherein the third layer comprises a physical (PHY) layer.

24. (new) The method of claim 19, wherein the transfer between the layers is performed by direct memory access (DMA).

25. (new) The method of claim 19, further comprising a data transfer method by direct memory access (DMA) comprising:

deciding a shift direction and a size of bits to be shifted in advance when a request is made;

receiving a data string from a first memory and storing said data string in a DMA memory by shifting according to said decided shift direction and said size of bits; and

sequentially transferring said stored data string to a second memory.

26. (new) The method of claim 25, wherein the shift direction and size of bits to be shifted is decided according to information in a header.

27. (new) The method of claim 24, further comprising a data transfer method by direct memory access (DMA) comprising:

deciding a shift direction and a size of bits to be shifted in advance when a request is made;

receiving a data string from a first memory and storing said data string in a DMA memory by shifting according to said decided shift direction and said size of bits; and

sequentially transferring said stored data string to a second memory.

28. (new) An apparatus for generating a data packet in a mobile communication system, the apparatus comprising:

a first layer to transfer at least one first layer data packet to a second layer, said second layer to receive said at least one first layer data packet from a first layer, to store said at least one first layer data packet in a second layer memory by shifting said at least one first layer data packet by as many bits as indicated by a second layer header, to add the second layer header in front of said at least one first layer data packet to make a second layer data packet and to transfer at least one second layer data packet to a third layer,

wherein said second layer header includes control information for said second layer data packet.

29. (new) The apparatus of claim 28, wherein said third layer to receive said at least one second layer data packet, to store said at least one second layer data packet in a third layer memory and to add a cyclic redundancy checking (CRC) at the rear of said at least one second layer data packet to make a third layer data packet.

30. (new) The apparatus of claim 28, wherein the first layer comprises a radio link control (RLC) layer.

31. (new) The apparatus of claim 28, wherein the second layer comprises a medium access control (MAC) layer.

32. (new) The apparatus of claim 28, wherein the third layer comprises a physical (PHY) layer.

33. (new) The apparatus of claim 28, wherein the transfer between the layers is performed by direct memory access (DMA).

34. (new) The apparatus of claim 28, further comprising a direct memory access (DMA) medium comprising:

a controller to decide a shift direction and a size of bits to be shifted in advance when a request is made;

a memory to receive a data string from a first memory and to store said data string by shifting according to said decided shift direction and said size of bits; and

a transfer unit to sequentially transfer said stored data string to a second memory.

35. (new) The apparatus of claim 33, further comprising a direct memory access (DMA) medium comprising:

a controller to decide a shift direction and a size of bits to be shifted in advance when a request is made;

a memory to receive a data string from a first memory and to store said data string by shifting according to said decided shift direction and said size of bits; and

a transfer unit to sequentially transfer said stored data string to a second memory.